

III.—*Fossil Arthropods in the British Museum.*—III.

By T. D. A. COCKERELL, University of Colorado.

THE present part deals wholly with Coleopterous elytra from the Eocene.

Mr. R. J. Tillyard*, describing some fossil beetle elytra from Australia, remarks:—"The placing of single elytra, however perfect, can seldom be more than a matter of conjecture, since there are scarcely any types of sculpture that are confined to one family only. But, where the fossil specimen is well enough preserved, it is nevertheless usual to name it. Thus, a number of what may be termed 'genera of convenience' have arisen, of which it may be said that each one serves to gather together, as a single group, all those fossil elytra which show correspondence in shape and sculpture, within certain limits. An example of such a genus is *Ademosyne*, Handlirsch, from the Ipswich beds. Under this name are now comprised no less than ten species, which might belong to the Hydrophilidæ, Parnidæ, or Tenebrionidæ, the type of elytron which they represent being commonly found in all three families."

In the case of the elytra described below, the uncertainty referred to by Mr. Tillyard exists; though it might, perhaps, be removed, at least in part, by one more familiar with the Coleoptera of the world. An intensive morphological study of Coleopterous elytra, with large quantities of material, would probably reveal many significant diagnostic features, which could be seen in the fossils. In the meanwhile, however, all these elytra present excellent *specific* characters, and are, I think, perfectly recognizable. They can accordingly be used in stratigraphy and in estimating the resemblances and differences between Cenozoic faunæ. For these reasons alone it appears justifiable to make them known.

Carabites euneatus, sp. n. (Fig. 1.)

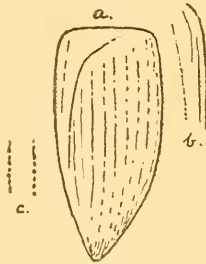
Elytra 8.5 mm. long and slightly over 4 wide, the base broadly truncate, the apex narrowed but obtuse, the outer margin gently curved; ten delicately punctured and feebly impressed striæ, the outer one failing below the humeral angle, and supplemented by a short stria a short distance mesad of it; a fine curved sulcus or impressed line, independent of the striæ, extending inward and downward from

* Proc. Linn. Soc. New South Wales, xlii. (1918) p. 749.

the humeral region, and finally passing apicad, nearly parallel with the inner margin. In the punctured striæ there are about two punctures in 160μ .

Bartonian, Bagshot Beds, Bournemouth (*Gardner*). British Museum, 19014, with reverse.

Fig. 1.

*Carabites cuneatus*, sp. n.

I sent a sketch of this elytron to Mr. S. A. Rohwer at the U.S. National Museum, asking him to seek the advice of the well-known Coleopterists Messrs. Barber and Schwarz. He writes:—"I have shown your drawing of the beetle elytron to both Barber and Schwarz, and they agree that it might be that of a good many different groups of beetles, but suggest it may possibly be that of a Carabid, and possibly a Harpalid. The 'sulcus' is produced by the fold of the elytron, and the small part is 'epipleurite' of the elytron turned under. It is probable that the view you have is from the under side. By the study of a detached elytron of any large Carabid you can easily see what the 'sulcus' of the fossil really is."

Carabites parallelus, sp. n. (Fig. 2.)

Elytra about 10 mm. long and slightly over 4 wide, the actual apex not preserved, but evidently very obtuse; margins subparallel; sculpture as in 19014, with the same curved sulcus.

Bartonian, Bagshot Beds, Bournemouth (*Gardner*). British Museum, 18999.

I had referred this and the previous species to *Hydrophilites*, but follow the opinion as to possible affinities expressed by Messrs. Barber and Schwarz.

Fig. 2.

*Carabites parallelus*, sp. n.*Tenebrionites* (gen. nov.) *anglicus*, sp. n. (Fig. 3.)

Elytra 9.5 mm. long, 3.8 wide, base obliquely truncate, apex sharply pointed; inner margin from 1.5 mm. from base to 3 mm. from apex, straight, with two rows of rather coarsely punctured striæ parallel with it, the first marginal, the second less than half a millimetre from it; rather widely spaced and indistinct striæ converge toward the apex, but the disc shows no distinct striæ, and its surface is broken up into irregular subreticulate areas, defined by impressed lines; humeral region with a very oblique short stria.

Fig. 3.

*Tenebrionites anglicus*, sp. n.

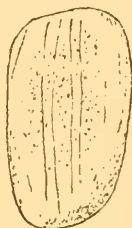
Bartonian, Bagshot Beds, Bournemouth (*Gardner*). British Museum, 19015.

The sculpture is suggestive of certain Tenebrionids, as *Asida opaca*, Say. The shape, especially the inner margin, recalls the Siberian Jurassic fossil *Doggeria sibirica*, Handlirsch. (The species which Handlirsch refers to *Doggeria* are probably not congeneric, so *D. sibirica* is herewith designated the type of the genus.)

Chrysomelites quadrilineatus, sp. n. (Fig. 4.)

Elytra 5.5 mm. long, a little over 3 broad; subquadrate, with obliquely truncate base and apex; outer margin feebly convex; surface minutely pustulose; disc with two pairs of

Fig. 4.



Chrysomelites quadrilineatus, sp. n.

parallel longitudinal striæ, not deeply impressed, the outermost of one pair 1 mm. distant from the outermost of the other. There are no dark bands or markings; as preserved the elytron is pale ferruginous.

Bartonian, Bagshot Beds, Bournemouth (*Gardner*). British Museum, 19006, with reverse.

The parallel striæ suggest the fossil *Pachycoleon woodleyi* (Westwood), from the Lower Purbeck. The insect appears to belong to the Chrysomelidæ, but cannot be referred with any assurance to a living genus.

Carabites peracutus, sp. n. (Fig. 5.)

Elytra 11.4 mm. long, 4.3 mm. broad; cuneate, with straight inner margin, strongly convex outer margin, and very acute apex; a stria close to inner margin, and eight other ones, sharp and distinct, but failing about 3.5 mm. from apex; on close examination the striæ are seen to be obscurely and rather coarsely punctate.

Bartonian, Bagshot Beds, Bournemouth (*Gardner*, 21).
British Museum, 19018.

Fig. 5.



Carabites peracutus, sp. n.

Resembles *Carabites gardneri*, Ckll., but that is considerably larger, with the striæ strong to the apex and the inner margin gently curved before the apex.

Buprestites purbecensis, sp. n. (Fig. 6.)

Elytra probably about 11 mm. long (9 mm. preserved), 3.6 mm. wide, acute at apex; eleven sharp striæ, four in

Fig. 6.



Buprestites purbecensis, sp. n.

1 mm. transversely (in 19018 the striæ are half a millimetre apart); striæ extending to the apical region and not distinctly punctured.

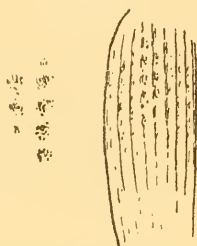
Upper Eocene, Bagshot Beds, Studland Bay, Isle of Purbeck, Dorset (*Brodie*). British Museum, 10423.

Very much like modern *Buprestis*, but the apex appears to be sharper than usual.

Curculionites brethiformis, sp. n. (Fig. 7.)

Elytra probably at least 13 mm. long (11.3 mm. preserved), 4 mm. wide, nearly parallel-sided, the humerus gently rounded, apex lost. Nine coarse strong striæ (in middle half a millimetre apart), more or less distinctly interrupted by large shallow depressions, about three in 2 mm. longitudinally.

Fig. 7.

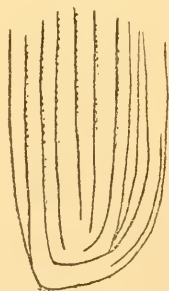


Curculionites brethiformis, sp. n.

Bartonian, Bagshot Beds, Bournemouth (*Gardner*, 8 and 15). British Museum, 19007, with reverse.

The punctiform depressions are too large and shallow for an Elaterid, and appear to indicate an unusually elongate member of the Rhynchophora, similar to the Brenthidæ.

Fig. 8.



Chrysomelites bartonicus, sp. n.

Chrysolites bartonicus, sp. n. (Fig. 8.)

Elytra probably about 7 mm. long (6 mm. preserved), 3 mm. wide; apex very obtuse, subtruncate; ten very finely punctured striæ, sharp and distinct, with the arrangement shown in the figure. No markings are preserved.

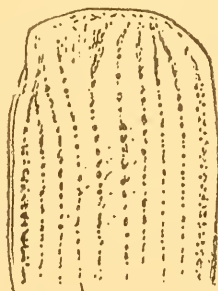
Bartonian. The label is lost, but the soft white iron-stained rock agrees with that of 19022, from the Bagshot Beds, Bournemouth (*Gardner*). I have marked the specimen \times .

The form agrees with the Chrysolimidæ.

Curculionites optimus, sp. n. (Fig. 9.)

Elytra probably about 14 mm. long (11 mm. preserved), 6.5 mm. wide; nearly parallel-sided; humeral angle very distinct; ten rows of very distinct but irregularly placed punctures, the innermost row double and the outermost more or less so. The figure shows the arrangement of the rows.

Fig. 9.

*Curculionites optimus*, sp. n.

Bartonian, Lower Bagshot Beds, Bournemouth. British Museum, 12869, with reverse.

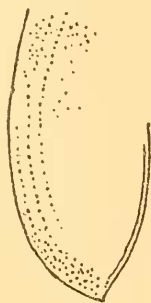
It was purchased from F. H. Butler in 1909, but came from the Nevil Jones collection.

Erotylites (gen. nov.) *wallacei*, sp. n. (Fig. 10.)

Elytra about 12.3 mm. long, 4.8 mm. broad, very convex, the apex broad, but with a sharp point; surface (abraded in middle) beset with fine distinct punctures, which run more or less in rows, as shown in the figure.

Bartonian, Lower Bagshot, Corfe Clay, Creech, between Corfe and Wareham, Dorset (*W. R. Brodie*, 14). British Museum, 19047. Purchased from the executors of H. S. Beckles in 1891.

Fig. 10.

*Erotylites wallacei*, sp. n.

The shape of the elytron is like that of *Cypherotylus aspersus*, Gorham (Erotylidæ). The general form is rather suggestive of Tenebrionidæ, but the apex is different.

Named after Dr. A. R. Wallace, in memory of a visit to Corfe in his company many years ago.

IV.—*New Species of African Simuliidæ.*

By A. W. J. POMEROY, M.B.E.

[Plates III. & IV.]

In a previous paper* the writer pointed out the importance of the respiratory filaments of the pupa of *Simulium* as specific characters in distinguishing closely allied species, and an extended series of observations on African species confirms this opinion. In addition to the differences of the formation of the branching of the filaments, what may prove to be a very important clue to generic character has been observed, namely, the composition of the chitinous membrane of the filaments themselves. In some species the chitin is in the form of "scalloped" plates welded together,

* Pomeroy, Bull. U.S. Dep. Agric. no. 329, Professional Paper, March 6, 1916, p. 24.